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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/512,822	02/25/2000	Kimio Tatsuno	NIT-185	6710

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EXAMINER	
PATEL, GAUTAM	

ART UNIT	PAPER NUMBER
2655	12

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/512,822	TATSUNO ET AL.	
	Examiner	Art Unit	
	Gautam R. Patel	2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-5,7-9 and 20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-5,7-9 and 20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1, 3-5, 7-9 and 20 are pending for the examination.

RCE STATUS

2. The request filed on 10-9-01 for Request for continued Examination (RCE) under 37 CFR 1.114 based on parent Application is acceptable and a RCE has been established. An action on the RCE follows.

Claim Rejections - 35 U.S.C. § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.
> The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claim 20 is rejected under 35 U.S.C. § 102(e) as being anticipated Shih et al., US. patent 6,314,063 (hereafter Shih).

As to claim 20, Shih discloses the invention as claimed [see Figs.2-3] including an optical head for recording comprising:

A light source module [fig. 2, unit 200],

a beam splitter [fig. 2, unit 220], and

an objective lens [fig. 2, unit 250], along a single optical path [col. 5, lines 8-10], said light source module comprising plurality of semiconductor lasers [lasers 210] and

mounted on a semiconductor substrate with photo-detectors [fig2. units 230a and 230b] for automatic focus detection and tracking detection formed thereon monolithically, said semiconductor lasers being diferet in wavelength in association with the optical disc [unit 260] [col. 4, line 28 to col. 5, line 20].

Claim Rejections - 35 U.S.C. § 103

4. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 3-5, 7-9 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Shih as applied to claim 20 above and in view of Kume, US. patent 5,727,111 (hereafter Kume).

As to claim 1, Shih discloses the invention as claimed [see Figs. 2-5, especially fig. 2], including an optical head, a first photodetector, a second photodetector and two light sources comprising:

a first photodetector means [fig. 3, unit 310a] for obtaining out-of-focus detection signals based on the laser beams which have returned after being reflected by a surface of said recording medium, a second photodetector means [fig. 3, unit 310b] for obtaining a tracking error detection signal and an information reproduction signal [col. 5, line 23 to col. 6, line 13]; and

a mirror [fig. 3a, unit 316] constituting a part of said recess, and arranged to reflect laser beams emitted from said first and second laser light sources to be outputted in a direction away from and normal to the substrate surface [col. 5, line 23 to col. 6, line 13];

first photodetector means [fig. 3, unit 330a] for obtaining out-of-focus detection signals (FES) based on the laser beams which have returned after being reflected by a surface of said recording medium, second photodetector means [fig. 3, unit 330b] for obtaining a tracking error detection signal and an information reproduction signal [col. 6, lines 4-59];

in said first photodetector means, a first detecting means for detecting the out-of-focus detection signal [focus error signal FES] based on the laser beam from the first laser light source, and second detecting means for detecting the out-of-focus detection signal based on the laser beam from the second laser light source are spaced away form each other [col. 6, lines 21-26] from each [col. 6, lines 4-59];

Shih discloses all of the above elements, including dual power source of two wavelengths and dual photo-detectors one for focus control and another one for tracking control. Shih does not specifically disclose a third photodetector for monitoring the quantity of light emitted form either laser diodes to the extent claimed.

However, it is well known in the art that by monitoring the light amount of the laser optical disc can be accurately controlled. Also, Kume clearly discloses:

a third photodetector [fig. 15, unit 53g] means for monitoring the quantity of light emitted from the first or the second laser light source, are provided [col. 14, lines 2-21].

Both Shih and Kume are interested in improving the quality of signals in an optical head and providing smooth read and write signals. Bothe rae showing integrated structure of components.

One of ordinary skill in the art at the time of invention would have realized that it would be advantageous to provide stable operation of the disc and also a stability of the playback operation in an optical system. Therefore, it would have been obvious to have used a third light detector in the system of Shih as taught by Kume because one would

be motivated to provide accurate control of the disc and improve stability of the playback operation of the pickup [col. 14, lines 16-21; Kume].

6. As to claim 3, Shih discloses:

said recording medium is any one of an optical information recording and reproducing medium, an optical information reproducing medium, a magneto-optic information recording and reproducing medium, a magneto-optic information reproducing medium, an optical information recording and reproducing disc, an optical information reproducing disc, a magneto-optic information recording and reproducing disc, and a magneto-optic information reproducing disc [col. 1, lines 13-19].

7. As to claim 4, Shih discloses:

a laser light source having an oscillation wavelength of 650 nm is used in the case where the recording medium is a DVD medium, while a laser light source having an oscillation wavelength of 780 nm is used in the case where the recording medium is a CD medium [col. 2, lines 28-56].

NOTE: Shih does not exactly discloses that DVD wavelength is 660 nm. However one of ordinary skill in the art knows that wavelength for DVD has been in the range of 630 to 680 nm and depending upon application these wavelengths are routinely used. Older version use higher wavelengths and newer versions use lower wavelengths. So having exact 660 nm does not constitute a patentable differentiation as long as that wavelength is applicable to DVD.

8. As to claim 5, it is rejected for the similar reasons set forth in the rejection of claim 1, supra.

9. As to claim 7, Shih discloses:

said first and second laser light sources are disposed adjacent each other so as to permit a single optical path to be used in the optical head [col. 5, lines 27-47 and fig. 3a].

10. Claims 8-9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Shih and Kume as applied to claims 1, 3-5, 7 and 20 above and further in view of Kawachi et al., US. patent 4,750,799 (hereafter Kawachi).

As to claim 8, combination of Shih and Kume discloses all of above described elements including, a first and second laser sources of different wavelength, first second and third photodetectors, one for focus control and another one for tracking control and third for light amount monitoring, as disclosed above. Also Shih clearly discloses that all the components are deposited on as single substrate and are enclosed in a closed unit. The combination of Shih and Kume does not disclose well known details of layout of components when they are placed in single unit and/or a single substrate [hybrid design]. However one of ordinary skill in the art knows that when components are placed on a single substrate, alignment marks inherently necessary on the components and on substrate so as to distinguish where each component goes with respect to each other and with respect to surface of the substrate. In short these markings for alignment are inherently necessary for any kind of substrate related layout. Also Kawachi clearly discloses:

substrate and said first laser light source are optically aligned with each other on the basis of alignment marks affixed to the substrate and the first laser light source, respectively; laser beams emitted from said first laser light sources are adapted to be reflected by a mirror constituting a part of said recess and to be outputted in a normal direction of the substrate surface or in a direction away from the substrate surface [col. 5, lines 19-42 and col. 14, line 19 to col. 7, line 5].

NOTE: Kawachi discloses only one light source [laser 3] and alignment of this source. Kawachi does not disclose second light source and its alignment. However one of ordinary skill in the art would have been able to incorporate second light source and many other necessary components in system of Kawachi from the teaching of Kawachi [col. 15, lines 1-5], because Kawachi teaches that his system can be adopted to incorporate many more lasers light detectors and wavelength filters.

All combination of Shih, Kume and Kawachi are interested in improving the quality of signals in an optical head and providing smooth read and write signals and providing best platform for implementing components on the same substrate.

One of ordinary skill in the art at the time of invention would have realized that it would be advantageous and necessary to provide a smooth and correct layout of multiple components on a single substrate. Therefore, it would have been obvious to have used alignments marks for various components and substrate itself in the system of Shih and Kume as taught by Kawachi because it would have provided a practical vehicle for layout of the component on such a small scale layout of a single substrate and thus saving time and expense of layout of multiple components. Also, these provision of alignment marks is well within the ability of one of ordinary skill in the art, these are well known tools and therefore they do constitute a patentable limitation as such.

11. As to claim 9, Kume discloses:

said second and third photodetector means have photodetection sensitivity for the laser beams of the first and second oscillation wavelengths [col. 13, line 27 to col. 14, line 21].

Other prior art cited

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure

a. Uchizaki et al. (US. patent 6,646,975) "Semiconductor laser array ...".

b. Ohyama (US. patent 6,366,548) "Optical pickup ..".

c. Miike (US. patent 6,111,827) "Optical pickup ..".

Contact Information

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gautam R. Patel whose telephone number is (703) 308-7940. The examiner can normally be reached on Monday through Thursday from 7:30 to 6.

The appropriate fax number for the organization (Group 2650) where this application or proceeding is assigned is (703) 872-9314.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Doris To can be reached on (703) 305-4827.

Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 305-4700 or the group Customer Service section whose telephone number is (703) 306-0377.

Gautam R. Patel
Primary Examiner
Group Art Unit 2655

March 27, 2004